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Communicable Disease Control *UPDATE*

MECKLENBURG COUNTY HEALTH DEPARTMENT

A Quarterly Publication

Disease Detectives

Pertussis Outbreaks—Nationwide & Close to Home

Since December 2011, outbreaks of pertussis have been reported in Missouri, Washington state, Pennsylvania, Iowa, and British Columbia. Recently, North Carolina joined these states as Alamance county battles an outbreak involving five elementary schools, four middle schools, two daycares, and three other individuals in the county. This has prompted the Alamance County Health Department to announce on February 23, 2012, that it lifted restrictions on who can receive the Tdap vaccine, offering the pertussis vaccination free for a limited time in community vaccination clinics. Health officials are especially concentrating their efforts on infants less than twelve months of age, pregnant women, and immunocompromised individuals who are considered at highest risk.

Over the past several years, many areas in the United States have seen increases in the number of pertussis cases. A multitude of factors have been attributed to this increase. The pertussis vaccination for adults, Tdap, is not a required vaccination so many adults are thought to be susceptible to infection. This waning pertussis immunity was the topic of study in Michigan which showed an efficacy of 80% three years after the last dose, 50% between four and seven years and virtually no protection after twelve years of vaccination.

Other factors could be at work as well. There are many studies which show pertussis outbreaks are often associated with changes in the Bordetella pertussis strains, with the more virulent (P3) strains appearing to be partly responsible for a large outbreak in the Netherlands. Studies suggests that sudden increases in infectious diseases should include changes in the pathogen population including pertussis. There is also the challenge presented by parents who opt out of vaccination of their children due to religious or misguided concerns about the vaccines themselves.

Providers need to increase their awareness for possible cases of pertussis, particularly in adults and unvaccinated patients. Anyone with a cough lasting over two weeks should be questioned regarding whether the coughing spells are paroxysmal in nature, are ever followed by post-tussive vomiting, or periods of apnea. If the cough meets any of these criteria, the patient and all household contacts should be treated.

Pertussis is reportable to the Health Department within twenty-four hours. To report, contact any of the Communicable Disease Control nurses listed on page 8 of this issue. The patient should be instructed to remain out of work or school until a Health Department nurse determines the patient's status.

Please contact Belinda Worsham at ***Belinda.Worsham@MecklenburgCountyNC.gov*** or 704.336.5498.

Inside this issue:

Visit us on the web at *www.meckhealth.org*

Legionellosis Increase in U.S.

Legionellosis is an acute bacterial disease with two distinct clinical manifestations— pneumonia, which is sometimes fatal, and Pontiac Fever. Pontiac Fever is a self limited febrile illness. Reported incidence rates of confirmed cases of legionellosis increased nearly threefold (217%) during 2000-2009 in the United States. The reasons for the increase are unknown, but may be related to the increase in the number of elderly persons, increase in the number of persons with risk factors, and increased case detection/ reporting. In 2009, 3,522 cases were reportable in the U.S., the most since legionellosis became reportable in 1976. It is estimated that 8,000-18,000 persons are hospitalized each year with legionellosis. The Mecklenburg County Health Department received two reports of residents with legionellosis in 2011. Both cases were travelling out of state and had underlying immunosuppressive conditions. Both survived.

Legionellosis is classified as a waterborne disease. Legionella can be found in natural, freshwater environments, but they are present in insufficient numbers to cause disease. Drinking water, whirlpool spas, and cooling towers provide conditions needed for transmission (heat, stasis, and aerosolization). Epidemiologic risk factors include recent travel, exposure to whirlpool spas, maintenance work on domestic plumbing, renal failure, hepatitis, diabetes, systemic malignancy, smoking and immune system disorders. Cases occur year round but are more common in the summer and fall. Travel-associated outbreaks, outbreaks in community settings, nosocomial outbreaks, and occupational outbreaks are common.

The following patients should be tested for Legionnaires' disease: hospitalized patients with enigmatic pneumonia; patients with pneumonia in the setting of a legionellosis outbreak; patients who fail to respond to treatment with a β-lactam or cephalosporin antibiotic; patients with travel history; and patients with a nosocomial pneumonia with unknown etiology. The following tests are available: urinary antigen assay (preferred); culture of respiratory secretions (preferred); paired serology; and direct fluorescent antibody stain.

For more information, contact Jane Hoffman at 704.336.5490 or *Jane.Hoffman@MecklenburgCounty*

This periodical is written and distributed quarterly by the Communicable Disease Control Program of the Mecklenburg County Health Department for the purpose of updating the medical community in the activities of Communicable Disease Control. Program members include: Health Director—E. Wynn Mabry, MD; Medical Director— Stephen R. Keener; MD; Deputy Health Director—Bobby Cobb; Director, CD Control—Carmel Clements; Sr. Health Manager—Lorraine Houser; CD Control nurses—Freda Grant, Jane Hoffman, Penny Moore, Beth Quinn, Belinda Worsham; —Elizabeth Young, Earlene Campbell-Coleman (TB Outreach/ Adult Day Health); Rabies/Zoonosis Control—Al Piercy; Health Supervisor—Carlos McCoy; DIS—Mary Ann Curtis, John Little, Michael Rogers, Jose' Pena; Preparedness Coordinator—Bobby Kennedy; Office Assistants—Pamela Blount, Vivian Brown, Janet Contreras.

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Malaria in the Bahamas

Earlier this year, the CDC received an official report of a confirmed case of malaria (*Plasmodium falciparum*) in a U.S. traveler to the island of Great Exuma, Bahamas. The traveler visited the island in February and March 2012. An outbreak of malaria was previously reported in Great Exuma Island, Bahamas in 2006, and the last documented case on the island was in 2008. Malaria is not endemic to the Bahamas. As of April 17, 2012, there have been no other reports of malaria in residents or visitors to Great Exuma. Based on new surveillance information, the CDC is not recommending malaria prophylaxis for travel to Great Exuma. Healthcare providers needing assistance with diagnosis or management of suspected or confirmed cases of malaria should call the CDC Malaria Hotline toll-free 855.856.4713 or after hours 770.488.7100.

To more information, contact Jane Hoffman at 704.336.5490 or *Jane.Hoffman@MecklenburgCountyNC.gov*.

Did you know…

…Polio cases were recently reported in China for the first time in 10 years? All cases were in the Xinjiang Uygur region. As a result of this outbreak, the CDC recommends that travelers to all parts of China be up-to-date on the polio vaccine. Additional information can be found at ***www.cdc.gov***.

Hepatitis C: The Silent Epidemic

Hepatitis C is the most prevalent blood borne infection in the United States. Approximately 3.2 million persons are chronically infected in our country. The majority of new infections occur in adults and injecting drug users. Since the late 1980s, the number of new acute hepatitis C infections has declined. The decrease of new cases may be due to the increased use of risk-reduction practices among injecting drug users.

HCV is primarily spread by direct blood-to-blood exposure. Sexual transmission is uncommon. Persons with a increased risk of infection include: persons with a history of current or past injection drug use; recipients of blood or solid organs before 1992; persons with undiagnosed liver problems; infants born to hepatitis C infected mothers; health care or public safety workers (after known exposure); and HIV+ persons. Persons in high risk groups should be routinely tested for the virus. In fact, federal health officials are considering whether "Baby Boomers," anyone born between 1945 and 1965, should get a one-time blood test to check if they harbor this disease. The reason: two-thirds of people with chronic HCV are Baby Boomers and most are unaware of their infection.

Two new drugs that hit the market in 2011 promise better success in the treatment of the HCV. Research indicates that the current two-drug treatment for HCV is successful about 40% of the time in treating the most common genotype of the virus. However, the side effects can be grueling in the process. Now, major new drug studies have shown that adding a new drug--either Vertex Pharmaceuticals' **telaprevir** or Merck & Co.'s **boceprevir** can boost success rates as high as 75%. These new drugs also allow some people to cut treatment time in half, from twelve to six months. The benefit of this is the shorter the treatment regime, the less time there is to experience potential side effects.

A new national helpline, 877. 435.7443, run by and for people affected by hepatitis C was launched on February 1, 2012. This helpline has specially trained peer counselors using a structured approach to help callers navigate through screening, diagnosis, medical evaluation, and treatment. Follow-up contact by the counselors keep callers engaged at each step of their journey and help them make and follow through with their hepatitis C related decisions.

The state public health laboratory does not provide Hepatitis C testing. Beginning April 1, 2012, NC Administrative Code 10A NCAC 41A.0214 requires hepatitis C testing for blood borne pathogen exposures in addition to the Hepatitis B and HIV testing that is already required. ***Mecklenburg County Health Department will only test for hepatitis C for blood-borne pathogen exposures.*** (See complete Healthcare Provider Advisory at ***Healthcare Provider Alerts***)

Testing infants born to infected mothers should be delayed until the child is at least 15-18 months of age. Currently, there is no vaccine available to prevent transmission of HCV, but persons chronically infected with hepatitis C should be vaccinated against hepatitis A and B if they are at risk for these infections.

In North Carolina, only **acute** hepatitis C is reportable to the local health department. The 2012 CDC case definition of acute hepatitis C is: An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., anorexia, abdominal discomfort, nausea, vomiting), and either jaundice/dark urine, or serum alanine aminotransferase (ALT) levels>400 IU/L. Report **acute** hepatitis C within seven days if clinical and laboratory criteria meet the CDC's case definition for confirmed acute hepatitis C.

For more information, contact Penny Moore at 704.353.1270 or ***Wilma.Moore@MecklenburgCountyNC.gov.***

Hepatitis B and Diabetes

A total of 25 outbreaks of hepatitis B in diabetics living in long-term care facilities in the United States have been reported since 1996. The outbreaks prompted the Hepatitis Vaccines Work Group of the Advisory Committee on Immunization Practices (ACIP) to evaluate the risk of hepatitis B virus infection among adults diagnosed with diabetes. In a recent study, adult diabetics aged 23 -59 years were 2.1 times more likely to develop acute hepatitis B compared to those without diabetes. In the same study, adult diabetics 60 years and older were 1.5 times more likely to develop adult hepatitis B compared to persons without diabetes.

After reviewing all available information, the ACIP released new hepatitis B vaccine recommendations for diabetics on October 25, 2011. The recommendation is as follows: 1) Hepatitis B vaccinations should be administered to unvaccinated adults with diabetes mellitus who are aged 19-59 years; 2) Hepatitis B vaccination may be administered at the discretion of the treating clinician to unvaccinated adults with diabetes mellitus who are aged ≥ 60 years. Diabetics are also at increased risk for another liver disease, non-alcoholic fatty liver disease. To read the full recommendation, go to ***http://www.cdc.gov/mmwr/pdf/wk/mm6050.pdf.***

Five "Types" of Meningitis

Meningitis is a disease caused by inflammation of the protective membranes covering the brain and spinal cord. The inflammation is usually caused by an infection of the fluid surrounding the brain and spinal cord. It may develop in response to a number of causes, usually bacteria and viruses, but meningitis can also be caused by physical injury, cancer or medications. The severity of the illness and treatment differ depending on the cause.

Bacterial meningitis is usually severe and may lead to brain damage, hearing loss, learning disabilities or death. Some of the leading causes of bacterial meningitis in the United States include *Haemophilus influenzae*, *Streptococcus pneumoniae* (pneumococcal meningitis), group B *Streptococcus*, *Listeria monocytogenes*, and *Neisseria meningitidis* (meningococcal meningitis). Three types are vaccine preventable (*Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae type b*). Approximately 4,100 cases of bacterial meningitis, including 500 deaths, occur each year in the United States. The bacteria can be spread by the exchange of respiratory and throat secretions.

Viral meningitis is generally less severe and resolves without specific treatment. This type of infection is usually caused by common viruses. Most cases in the U.S., especially in the summer months, are caused by common enteroviruses. Enteroviruses are most often spread from person to person through fecal contamination. Other viral infections that can lead to meningitis include mumps, Epstein-Barr, herpes simplex, varicella-zoster, measles, influenza, arboviruses, and lymphocytic choriomeningitis virus (spread by rodents). People who are around someone with viral meningitis have a chance of becoming infected with the virus but they are unlikely to develop meningitis.

Fungal meningitis is rare, but can be life-threatening and is more common in persons with immune system deficiencies. *Cryptococcus neoformans* can be acquired through inhaling soil contaminated with wild bird droppings. *Histoplasma* is found in soil and bird/bat droppings. *Blastomyces* is found in decaying organic matter primarily in the Midwest and *Coccidioides* is found in the soil of Southwestern United States. Fungal meningitis is not spread person to person.

Parasitic meningitis is less common in developed countries. *Naegleria fowleri* causes a rare fatal brain infection known as Primary Amebic Meningoencephalitis (PAM). It infects people by entering the body through the nose and is not spread person to person or by drinking contaminated water. Approximately 3 infections occur each year in the U.S., mostly in southern-tier states. *Angiostrongylus cantonensis* (roundworm) infection is rare in the United States, is not spread person to person, and is acquired by eating raw or undercooked snails or slugs.

Non-infectious meningitis can be caused by cancers, lupus, certain drugs, head injury, and brain surgery.

For more information, contact Jane Hoffman at 704.336.5490 or ***Jane.Hoffman@MecklenburgCountyNC.gov.***

CDC– A Timeline

We continue looking back to 65 years of accomplishments by the CDC. Our Winter issue featured 1946 to 1956.

1957 National guidelines for influenza vaccine developed.
1958 First time a CDC team went to Southeast Asia, responding to an epidemic of cholera and smallpox.
1959 Dr. Robert Kissling developed the fluorescent antibody test for rabies, first used in a field trial with 100 percent accuracy.
1960 Tuberculosis Program moved from Public Health Service to CDC.
1961 CDC took over publication of *Morbidity and Mortality Weekly Report.*
1962 CDC played a key role in one of the greatest triumphs of public health: the eradication of smallpox.
1963 CDC tested the newly developed Jet Gun and vaccine for smallpox.
1964 First Surgeon General's report linking smoking to lung cancer. It stated that "cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action."
1965 New surveillance systems added to the original National Surveillance Program of 1952 included measles, shigellosis, tetanus, and trichinosis.
1966 CDC announced a national measles eradication campaign
1967 The Foreign Quarantine Service, one of the oldest and most prestigious units of the Public Health Service, joined CDC.
1968 CDC investigated an unidentified, highly infectious respiratory disease in Pontiac, Michigan, identified as Legionnaire's disease.
1969 CDC constructed a "biocontainment lab" to protect scientists while they work with deadly and infectious pathogens.
1970 The Communicable Disease Center became the Center for Disease Control.
1971 The National Center for Health Statistics conducted the first National Health and Nutrition Examination Survey to capture the health status of Americans.
1972 CDC assisted Sierra Leone in fighting a new outbreak of Lassa fever, a mysterious lethal viral disease.
1973 *MMWR* reported that lead emissions in a residential area constituted a public health threat—contrary to popular assumption at the time.
1974 CDC planned a major campaign to reverse the downward trend in the number of Americans immunized.
1975 The last victim of variola major smallpox, the more severe form of the disease, was reported.
1976 CDC investigated two outbreaks of a previously unknown deadly hemorrhagic fever, later known as Ebola, in Zaire and Sudan.
1977 Global eradication of smallpox was achieved.

Next issue: 1978—1998

Communicable Disease Morbidity—Mecklenburg County 2008-2011

Number of probable and confirmed disease cases in North Carolina by disease for reported cases 2008 – 2011. Reportable communicable diseases with NO reported cases in the period 2008 – 2011 were not included in this report. Because cases are routinely updated, case numbers may change (data was extracted February 2012). Case definitions for these diseases are available at: *http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/toc.html*

DISEASE	Cases in 2011	Cases in 2010	Cases in 2009	Cases in 2008
Botulism – (infant/ foodborne/wound)	0	0	0	1
Campylobacter infection	65	77	65	75
Chancroid	0	0	2	0
Chlamydia	7545	4629	5084	4325
Creutzfeldt-Jakob Disease	0	1	1	1
Cryptosporidiosis	10	5	18	13
Cyclosporiasis	0	1	0	0
Dengue◈	0	1	0	0
E. coli - shiga toxin producing	6	16	5	9
Ehrlichiosis, (Anaplasmosis, HME, Unspecified)	0	0	0	1
Encephalitis, arboviral, Eastern Equine	0	0	1	0
Encephalitis, arboviral, LaCrosse	0	0	3	0
Encephalitis, arboviral, West Nile Virus	0	0	6	0
Foodborne disease - other/unknown	0	0	0	1
Foodborne poisoning (fish/mushroom/ ciguatera)	0	0	1	0
Gonorrhea	2288	1516	1779	2145
Haemophilus influenzae, invasive disease	9	13	11	7
Hemolytic Uremic Syndrome	0	1	0	1
Hepatitis A	2	3	4	4
Hepatitis B - Acute	5	8	8	16
Hepatitis B - Chronic	171	133	187	218
Hepatitis B - Perinatal	0	0	0	1
Hepatitis C - Acute	0	0	1	1

Information compiled by North Carolina Division of Public Health, Epidemiology Section, Communicable Disease Branch

Continued page 6

Information compiled by North Carolina Division of Public Health Epidemiology Section, Communicable Disease Branch

DISEASE	Cases in 2011	Cases in 2010	Cases in 2009	Cases in 2008
HIV**	*	312	333	389
Influenza, adult death (18 years of age or more)***	0	3	3	0
Influenza, NOVEL virus infection	0	0	51	0
Influenza, pediatric death (<18 years of age)	0	0	2	0
Legionellosis	1	3	4	3
Listeriosis	1	1	3	4
Lyme Disease	3	5	3	2
Malaria◈	10	14	9	4
Meningitis, pneumococcal	2	3	4	3
Meningococcal invasive disease	0	0	4	1
Mumps	0	1	0	0
Non-gonococcal urethritis	375	183	388	384
Pertussis	6	19	11	36
PID	29	2	5	7
Q fever	1	0	0	0
Rocky Mountain Spotted Fever	8	8	7	23
Salmonellosis	182	198	139	146
Shigellosis	22	23	211	23
Streptococcal invasive infection, Group A	23	12	11	13
Syphilis (Primary, Secondary, Early Latent)	190	167	174	91
Toxic Shock Syndrome, non-streptococcal	1	0	0	0
Toxic Shock Syndrome, streptococcal	1	0	4	1
Tuberculosis	37	40	33	44
Typhoid Fever - acute	2	5	2	1
Vibrio infection (other than cholera & vulnificus)	0	1	0	0
Total	10995	7404	8577	7994

North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section
Communicable Disease Branch • Immunization Branch (WCH Section)

North Carolina Public Health

Confidential Communicable Disease Report—Part 1

NC DISEASE CODE (see reverse side for code)	DATE OF SYMPTOM ONSET

ATTENTION PHYSICIANS/HOSPITALS:
Mail/fax this form to your local health department.

Mecklenburg County Health Department
700 North Tryon St., Ste. 214
Charlotte, NC 28202

Sexually Transmitted Diseases, HIV & AIDS
(Call) 704.432.1742 or **(Fax)** 704.336.6200

All Other Reportable Communicable Diseases
(Call) 704.336.2817 or **(Fax)** 704.353.1202

Patient's First Name | Middle | Last | Suffix | Maiden/Other | Alias

Birthdate *(mm/dd/yyyy)*	Sex ☐M ☐F ☐Trans.	Parent or Guardian *(of minors)*	Patient Identifier / SSN

Patient's Street Address	City	State	ZIP	County	Phone ( ) -

Age _____ **Age Type** ☐Years ☐Months ☐Weeks ☐Days

Race (check all that apply): ☐White ☐Black/African American ☐American Indian/Alaska Native ☐Native Hawaiian or Pacific Islander ☐Asian ☐Other ☐Unknown

Ethnic Origin ☐Hispanic ☐Non-Hispanic

Was patient hospitalized for this disease? (>24 hours) ☐Yes ☐No

Did patient die from this disease? ☐Yes ☐No

Is the patient pregnant? ☐Yes ☐No

Patient is associated with (check all that apply):
- ☐ Child Care (child, household contact, or worker in child care)
- ☐ School (student or worker)
- ☐ College/University (student or worker)
- ☐ Food Service (food worker)
- ☐ Health Care (health care worker)
- ☐ Correctional Facility (inmate or worker)
- ☐ Long Term Care Facility (resident or worker)
- ☐ Military (active military, dependent, or recent retiree)
- ☐ Travel (outside continental United States in last 30 days)

Initial Source of Report to Public Health:
- ☐ **Health Care Provider (specify):**
  - ☐ Hospital
  - ☐ Private clinic/practice
  - ☐ Health Department
  - ☐ Correctional facility
- ☐ **Laboratory**
- ☐ **Other**

Name: _____
Contact Person/Title: _____
Phone: ( ) - Fax: ( ) -
Date Local Health Department Notified: _____

Where was disease/condition most likely acquired?
- ☐ In patient's county of residence
- ☐ Outside county, but within NC - County: _____
- ☐ Out of state - State/Territory: _____
- ☐ Out of USA - Country: _____
- ☐ Unknown

Local Health Department Use Only
Was this disease part of a recognized outbreak? ☐Yes ☐No
Outbreak setting:
- ☐ Restaurant/Retail (name): _____
- ☐ Household (index case): _____
- ☐ Child Care (name): _____
- ☐ Other (specify): _____
- ☐ Community (index case): _____

Local Health Department Use Only
Communicable Disease Nurse or Designee Reporting to DPH:
Name: _____
Phone: ( ) -
Date sent to DPH: _____
Local Health Director's Signature or Stamp Approving Report

CLINICAL INFORMATION

Specify patient symptoms and treatment:

For sexually transmitted diseases only—if patient was treated, specify medication, dosage, & duration:

DIAGNOSTIC TESTING

LABORATORY TESTING:

Collection Date	Result Date	Type of Test	Specimen Source	Results (include serogroup/type)	Reference Range	Lab Name—City/State

Attach Lab Report

DHHS 2124 (Revised January 2008) EPIDEMIOLOGY

Reporting Communicable Diseases – Mecklenburg County

To request N.C. Communicable Disease Report Cards, telephone 704.336.2817 or 704.432.1742

Mark all correspondence "CONFIDENTIAL"

Tuberculosis:

TB Clinic 704.432.2490
Mecklenburg County Health Department FAX 704.432.2493
2845 Beatties Ford Road
Charlotte, NC 28216

Sexually Transmitted Diseases, HIV, & AIDS:

HIV/STD Surveillance 704.432.1742
Mecklenburg County Health Department FAX 704.336.6200
700 N. Tryon Street, Suite 214
Charlotte, NC 28202

All Other Reportable Communicable Diseases including Viral Hepatitis A, B & C:

Report to any of the following nurses:

Freda Grant, RN 704.336.6436
Jane Hoffman, RN 704.336.5490
Elizabeth Quinn, RN 704.336.5398
Belinda Worsham, RN 704.336.5498
Penny Moore, RN 704.353.1270
Earlene Campbell-Coleman, RN 704.432.1975
Elizabeth Young, RN 704.336.5076
Communicable Disease Control FAX 704.353.1202
Mecklenburg County Health Department
700 N. Tryon Street, Suite 271
Charlotte, NC 28202

Animal Bite Consultation / Zoonoses / Rabies Prevention:

Al Piercy, RS 704.336.6440
Communicable Disease Control FAX 704.432.6708
Mecklenburg County Health Department
618 N. College St.
Charlotte, NC 28202
or State Veterinarian, Carl Williams, DVM 919.707.5900
State after hours 919.733.3419

Suspected Food borne Outbreaks / Restaurant, Lodging, Pool and Institutional Sanitation:

Food & Facilities Sanitation (Mon-Fri) 704.336.5100
Mecklenburg County Health Department (evenings; Sat/Sun) 704.432.1054
700 N. Tryon Street, Suite 208 (pager evenings; Sat/Sun) 704.580.0666
Charlotte, NC 28202 FAX 704.336.5306

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